

MEMORANDUM  
DEPARTMENT OF TRANSPORTATION

DATE May 15, 1975  
SUBJECT I-508, RIGHT-OF-WAY SETTLEMENT  
SIDNEY-UNADILLA  
DELAWARE COUNTY, PIN 9357.05-211  
MAP 2125, PARCELS 2136, 2139  
FROM A. Yatsevitch, Senior Engineering Geologist  
TO E. M. Moody, Associate Soils Engineer

*A. Yatsevitch*



Attached is the final report on Well No. 3 on the Norman Marks property initiated in February 1975. Mr. Richard Hill of the Region 9 Real Estate Office has been advised by telephone that the results of the water analyses for this well show no detrimental qualities in the water and that there are no further actions required on our part pertaining to acceptance of the well by Mr. Marks. Of course, we remain available for consultation in any relevant matters.

AY:BR  
Attachment

*Just*





NO. 3  
WATER WELL-NORMAN MARKS PROPERTY.

On February 4, 1975, at the request of Mr. Richard Hill (Real Estate Division-Region 9), this writer contacted Mr. Norman Marks and arranged for a meeting at the Marks residence in Unadilla to discuss the construction of a new well as directed by the January 27, 1975 memorandum from Mr. A. J. Casimo (Negotiations Bureau). This meeting took place on February 10, 1975 between Mr. Marks, Mr. Hill, Mr. Paul Rosenstein (Mr. Marks's designated driller) and this writer. The discussion produced an agreement between Mr. Marks, Mr. Rosenstein and Mr. Hill pertaining to the method of payment for the work to be done, and between this writer, Mr. Marks and Mr. Rosenstein pertaining to the starting date and location for the new well.

On February 13, 1975 Mr. Rosenstein set up his drilling rig and proceeded to drill a 6" hole at the approximate location agreed upon. Drilling progressed until March 3, 1975 when the well was terminated by mutual agreement in rock at the depth of 190 feet. Either the writer and/or Mr. Robert Bazarnick, (Jr. Engr. Geologist) was present during the entire drilling procedure. In summary, approximately 36 feet of overburden was penetrated and a gray shaley sandstone was encountered at approximately 38 feet. The casing was driven approximately 1.5 feet into rock before refusal. The bedrock consisted of alternating sequences of red shales and gray shaley sandstone (varying proportions). A small show of water was present between 98 feet and 100 feet in fine grained gray sandstone. At 115 feet in red shale an estimated total yield of over 15 G.P.M. was present. Several zones appeared to be contributing water at this point, with the static water level at approximately 32 feet.

Heavy rain, snow, and intermittent thawing conditions undeniably contributed to the sudden large quantities and high level of water in the well. Drilling continued until March 3, 1975 when at 190 feet it was decided that adequate storage capacity was reached in the well without encountering the soft red shale layer which yielded the unacceptable water in the other well on the property. A well log made up by the writer from bailed samples is attached. A bail test indicated a potential yield of 35 G.P.M. with an approximate drop of 20 feet in static water level. It was decided that a forty-eight hour continuous pump test would be adequate to establish the capacity of this well.

On March 4, 1974 an SD-8-75 2W AERMOTOR pump delivering approximately 13 G.P.M. was installed at a depth of 170 feet for the pumping test. After two hours of pumping the water cleared of all visible particulates and remained so throughout the test. The well was thoroughly disinfected during the pumping test. Water samples were taken at the conclusion of the forty-eight hour test for bacteriological and chemical analysis by the D.O.H. in Albany, not only from the new well but from the other two wells on the Marks property, to check for any possible deleterious effects of the new well on the others. It should be mentioned at this time that members of the Marks household noted that during drilling and pump-tests of the new well clouding of the water and other detrimental effects were noted in the water being pumped from the other wells. The magnitude of these effects were not evaluated except for noting their existence and apparent duration. The results of the D.O.H. water analyses are attached. No significant detrimental quality deviations from drinking water standards are indicated for the water from the new well.

Mr. Rosenstein has installed a cap on the casing pending acceptance of the water supply by Mr. Marks.

NYS  
Library  
30 Wolf Road, POD 34  
Albany, New York 12232





## 48-HOUR PUMP TEST

PUMP: Model SD-8-75 2W AERMOTOR (220V)

LOCATION: 170' ±

TIME STARTED: 1:45 P.M. March 4, 1975

\*NOTE: All Depth Measurements From Top of Casing 32" Above Ground Level

<u>TIME</u>	<u>WATER LEVEL</u>	<u>PUMPING RATE</u>	<u>COMMENTS</u>
1:45 P.M.	26'-1"	13 GPM	Red/Murky
2:45	28'-11"	13	Cloudy
3:45	29'-11"	13	Cloudy
4:45	31'-6"	13	Clear
5:45	31'-6"	13	"
10:30	-	13	"
9:00 A.M.	32'-1"	13	"
10:00	32'-1-1/2"	13	"
11:00	32'-2"	13	"
12:00 P.M.	32'-2-3/4"	13	"
1:00	32'-2-1/2"	13	"
2:00	32'-2-1/2"	13	"
6:00	32'-3-1/2"	13	"
8:00 A.M.	32'-5-1/2"	13	"
9:00	32'-6"	13	"
10:00	32'-7"	13	"
10:30	Pumps in other two wells turned on to clear for sampling		
11:00	34'-8"	13	"
12:00 P.M.	34'-6"	13	"
1:00	34'-6"	13	"
2:00 (END)	34'-8"	13	"

-----SAMPLES TAKEN FROM ALL THREE WELLS-----





WELL LOG - WELL NO. 3 MARKS PROPERTY

6'-0"	Yellowish fine gravelly silt loam
10'-0"	Yellowish fine gravelly silt loam
15'-0"	Yellowish medium gravelly silt loam Coarser and more red in gravel than above
20'-0"	Beige fine gravelly/coarse sandy silt loam
25'-0"	Reddish beige fine gravelly silt loam
30'-0"	Reddish coarse sandy silt loam. Multi-colored sand particles (80% green/grey, 10% red, 10% yellowish).
35'-0"	Rock. Grayish-green granitic composition. Some detrital reds and mafics. Probably boulder.
40'-0"	Multi-colored (60% green, 25% grey, 15% red) gravel detritus (mostly granitics and sandstones).
45'-0"	50/25/25 Fine sandy red shale/fine sandy green/grey shale/green/grey fine sandstone
50'-0"	Shaley fine grained red sandstone
55'-0"	Fine grained red shale (at least 30% non-red components).
60'-0"	Fine grained red shale
65'-0"	Slightly shaley fine grained red sandstone. Some grey.
70'-0"	50/50 Red/grey fine grained sandstone
75'-0"	Fine sandy red shale; some fine red/grey sandstone
80'-0"	50/50 Fine sandy red shale/fine sandy grey-green shale
85'-0"	Fine sandy grey shale
90'-0"	Fine sandy grey shale
95'-0"	70/30 Fine grained grey sandstone/fine sandy grey shale
100'-0"	80/20 Fine grained lt. grey sandstone/fine sandy grey shale
105'-0"	Fine grained lt. grey sandstone
110'-0"	95/5 Fine grained lt. grey sandstone/fine sandy grey shale. Trace pyrite.
115'-0"	95/4/1 Fine sandy red shale/fine sandy grey shale/fine grained grey sandstone.
120'-0"	50/45/5 Fine grained red sandstone/fine grained red shale/ fine grained grey shale





125'-0"	95/5 Fine grained red sandstone/fine sandy grey shale
130'-0"	45/30/20/5 Fine sandy grey shale/fine grained red sandstone/fine grey sandstone/fine sandy red shale
135'-0"	85/15 Fine grained grey sandstone/fine sandy grey shale
140'-0"	60/30/10 Fine sandy red shale/fine grained red sandstone/fine sandy grey shale
145'-0"	50/90/10 Fine grained red sandstone/fine sandy red shale/fine sandy grey shale
150'-0"	60/30/10 Fine grained red sandstone/fine sandy red shale/fine sandy grey shale
155'-0"	60/35/5 Fine grained red sandstone/fine sandy grey shale/fine sandy red shale
160'-0"	80/10/10 Fine sandy red shale/fine grained red sandstone/fine sandy grey shale
165'-0"	45/40/15 Fine sandy red shale/fine grained red sandstone/fine sandy grey shale
170'-0"	80/15/5 Fine sandy red shale/fine grained red sandstone/fine sandy grey shale
175'-0"	75/20/5 Fine grained red sandstone/fine sandy red shale/fine sandy grey shale. Trace pyrite.
180'-0"	75/20/5 Fine grained red sandstone/fine sandy red shale/fine sandy grey shale
185'-0"	65/30/5 Fine grained red sandstone/fine sandy red shale/fine sandy grey shale.
190'-0"	50/35/15 Fine grained red sandstone/fine sandy red shale/fine sandy grey shale

END





NOTE TO BE APPENDED TO WELL LOG:

The well log was compiled by the writer from wash samples brought up in the bailer and sampled after rinsing out the fines. These field samples were brought to the laboratory, washed thoroughly and dried prior to examination under the microscope. This procedure undoubtedly introduced some distortion of actual material characteristics into the sample descriptions due to the loss of the soluble fraction and corresponding exaggeration of those fractions less susceptible to the action of drilling and washing. Also, the sampling procedure by use of a bailer introduces a certain amount of contamination of the sample from specific horizons by fragments originating in upper parts of the borehole. Consequently, the lesser fractions in the descriptions may very well be "contamination" from other levels and not represent the content of the in-place material at the sampled depth.





NEW YORK STATE DEPARTMENT OF HEALTH  
DIVISION OF LABORATORIES AND RESEARCH  
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION  
(PAGE 1 OF 2)

LAB ACCESSION NO: 01151 YR/MO/DAY/HR SAMPLE REC'D: 75/03/07/11

REPORTING LAB: 10 GRIFFIN LAB  
PROGRAM: 820 NYS DEPT. OF TRANSP.  
STATION (SOURCE) NO:  
DRAINAGE BASIN: NY GAZETTEER NO: 1265 COUNTY: DELAWARE  
COORDINATES: DEG ' "N, DEG ' "W  
COMMON NAME INCL SUBMISHED: NORMAN MARKS PRIVATE SUPPLY-WELL No1

EXACT SAMPLING POINT: BASEMENT TAP  
TYPE OF SAMPLE: 16 PRIVATE SUPPLY, MISCELL.  
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 03/06/14  
REPORT SENT TO: CO (1) RO (0) LPHE (1) LHC (0) FED (0) CHEM (0)

PARAMETER	UNIT	RESULT	NOTATION
000100 COLOR (APPARENT)		3.	
000200 TURBIDITY, J.T.U.		1.2	
000300 CODR, HOT		1.0044	
000501 NITROGEN, AMMONIA AS N	MG/L	0.02	
000709 NITROGEN, NITRITE AS N	MCG/L	2.	
000801 NITROGEN, NITRATE AS N	MG/L	2.0	
001001 CHLORIDES	MG/L	8.	
001101 HARDNESS, TOTAL AS CaCO3	MG/L	45.	
001501 ALKALINITY, MTH OR AS CaCO3	MG/L	14.	
001900 PH (LABORATORY)		6.3	
006401 NITROGEN, KJELDAHL, INCL. AMM	MG/L	0.21	
006501 CHEMICAL OXYGEN DEMAND	MG/L	4.	LT
010001 IRON	MG/L	5.2	

DATE COMPLETED: 5/09/75

DEPUTY CHIEF ENGINEER, TECHNICAL SERVICES  
NYS DEPT. OF TRANSPORTATION, BLDG. 7A  
1220 WASHINGTON AVENUE  
ALBANY, N.Y. 12226

SUBMITTED BY: W HOFMANN





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RESULTS OF EXAMINATION

(PAGE 2 OF 2)

LAB ACCESSION NO: 01151 YR/MO/DAY/HR SAMPLE REC'D: 75/03/07/11

REPORTING LAB: 10 GRIFFIN LAB

PROGRAM: 820 NYS DEPT. OF TRANSP.

STATION (SOURCE) NO:

DRAINAGE BASIN: NY GAZETTEER NO: 1265 COUNTY: DELAWARE

COORDINATES: DEG ' "N, DEG ' "W

COMMON NAME INCL SUBMITTED: NORMAN MARKS PRIVATE SUPPLY-WELL NO1

EXACT SAMPLING POINT: BASEMENT TAP

TYPE OF SAMPLE: 16 PRIVATE SUPPLY, MISCELL.

MO/DAY/HR OF SAMPLING: FROM 00/00 TO 03/06/14

REPORT SENT TO: CO (1) RO (0) LPHE (1) LHO (0) FED (0) CHEM (0)

PARAMETER	UNIT	RESULT	NOTATION
010201 MANGANESE	MG/L	0.06	
010701 SODIUM	MG/L	50.	
100300 CODR, COLD		1.0044	
107101 PHOSPHATES, TOTAL AS P	MG/L	0.020	
010401 POTASSIUM	MG/L	10.	
002401 SULFATES AS SO4	MG/L	19.	
002001 TOTAL DISSOLVED SOLIDS	MG/L	77.	

DATE COMPLETED: 5/09/75

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RESULTS OF EXAMINATION

(PAGE 1 OF 2)

LAB ACCESSION NO: 01150 YR/MO/DAY/HR SAMPLE REC'D: 75/03/07/11

REPORTING LAB: 10 GRIFFIN LAB

PROGRAM: 820 NYS DEPT. OF TRANSP.

STATION (SOURCE) NO:

DRAINAGE BASIN: NY GAZETTEER NO: 1265 COUNTY: DELAWARE

COORDINATES: DEG ' "N, DEG ' "W

COMMON NAME INCL SUBMITTED: NORMANMARKS PRIVATE SUPPLY WELL NO2, UNADILLA

EXACT SAMPLING POINT: BASEMENT TAP

TYPE OF SAMPLE: 16 PRIVATE SUPPLY, MISCELL.

MO/DAY/HR OF SAMPLING: FROM 00/00 TO 03/06/14

REPORT SENT TO: CO (1) RO (0) LPHE (1) LHO (0) FED (0) CHEM (0)

PARAMETER	UNIT	RESULT	NOTATION
000200 TURBIDITY, J.T.U.		420.	
000300 CODR, HOT		3.0014	
000501 NITROGEN, AMMONIA AS N	MG/L	0.14	
000709 NITROGEN, NITRITE AS N	MCG/L	66.	
000801 NITROGEN, NITRATE AS N	MG/L	0.1	LT
001001 CHLORIDES	MG/L	59.	
001101 HARDNESS, TOTAL AS CaCO3	MG/L	23.	
001501 ALKALINITY, MTH OR AS CaCO3	MG/L	103.	
001900 PH (LABORATORY)		7.5	
006401 NITROGEN, KJELDAHL, INCL. AMM	MG/L	0.8	
006501 CHEMICAL OXYGEN DEMAND	MG/L	10.	
010001 IRON	MG/L	0.05	LT

DATE COMPLETED: 5/09/75

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RESULTS OF EXAMINATION  
(PAGE 2 OF 2)

LAB ACCESSION NO: 01150 YR/MO/DAY/HR SAMPLE REC'D: 75/03/07/11

REPORTING LAB: 10 GRIFFIN LAB  
PROGRAM: 820 NYS DEPT. OF TRANSP.  
STATION (SOURCE) NO:  
DRAINAGE BASIN: NY GAZETTEER NO: 1265 COUNTY: DELAWARE  
COORDINATES: DEG ' "N, DEG ' "W  
COMMON NAME INCL SUBMITTED: NORMANMARKS PRIVATE SUPPLY WELL NO2, UNADILLA

EXACT SAMPLING POINT: BASEMENT TAP  
TYPE OF SAMPLE: 16 PRIVATE SUPPLY, MISCELL.  
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 03/06/14  
REPORT SENT TO: CO (1), RO (0) LPHE (1) LHO (0) FED (0) CHEM (0)

PARAMETER	UNIT	RESULT	NOTATION
010201 MANGANESE	MG/L	0.02	
010701 SODIUM	MG/L	4.0	
100300 ODOR, COLD		3.0014	
107101 PHOSPHATES, TOTAL AS P	MG/L	0.091	
010401 POTASSIUM	MG/L	0.7	
002401 SULFATES AS SO4	MG/L	26.	
002001 TOTAL DISSOLVED SOLIDS	MG/L	238.	
100100 COLOR (TRUE)		0.	

DATE COMPLETED: 5/09/75

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NEW YORK STATE DEPARTMENT OF HEALTH  
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RESULTS OF EXAMINATION  
(PAGE 1 OF 2)

LAB ACCESSION NO: 01149 YR/MO/DAY/HR SAMPLE REC'D: 75/03/07/11

REPORTING LAB: 10 GRIFFIN LAB

PROGRAM: 820 NYS DEPT. OF TRANSP.

STATION (SOURCE) NO:

DRAINAGE BASIN: NY GAZETTEER NO: 1265 COUNTY: DELAWARE

COORDINATES: DEG ' "N, DEG ' "W

COMMON NAME INCL SUBMISHED: NORMANMARKS PRIVATE SUPPLY WELL NO3

EXACT SAMPLING POINT: WELL CASING

TYPE OF SAMPLE: 16 PRIVATE SUPPLY, MISCELL.

MO/DAY/HR OF SAMPLING: FROM 00/00 TO 03/06/14

REPORT SENT TO: CO (1) RO (0) LPHE (1) LHO (0) FED (0) CHEM (0)

PARAMETER	UNIT	RESULT	NOTATION
000100 COLOR (APPARENT)		5.	
000200 TURBIDITY, J.T.U.		1.2	
000300 ODOR, HOT		1.0044	
000501 NITROGEN, AMMONIA AS N	MG/L	0.02	LT
000709 NITROGEN, NITRITE AS N	MCG/L	2.	
000801 NITROGEN, NITRATE AS N	MG/L	2.0	
001001 CHLORIDES	MG/L	8.	
001101 HARDNESS, TOTAL AS $\text{CaCO}_3$	MG/L	44.	
001501 ALKALINITY, MTH OR AS $\text{CaCO}_3$	MG/L	15.	
001900 PH (LABORATORY)		6.3	
006401 NITROGEN, KJELDAHL, INCL. AMM	MG/L	0.27	
006501 CHEMICAL OXYGEN DEMAND	MG/L	4.	LT
010001 IRON	MG/L	0.05	LT

DATE COMPLETED: 5/09/75

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RESULTS OF EXAMINATION  
(PAGE 2 OF 2)

LAB ACCESSION NO: 01149 YR/MU/DAY/HR SAMPLE REC'D: 75/03/07/11

REPORTING LAB: 10 GRIFFIN LAB

PROGRAM: 820 NYS DEPT. OF TRANSP.

STATION (SOURCE) NO:

DRAINAGE BASIN: NY GAZETTEER NO: 1265 COUNTY: DELAWARE

COORDINATES: DEG ' "N, DEG ' "W

COMMON NAME INCL SUBMITTED: NORMANMARKS PRIVATE SUPPLY WELL NO3

EXACT SAMPLING POINT: WELL CASING

TYPE OF SAMPLE: 16 PRIVATE SUPPLY, MISCELL.

MU/DAY/HR OF SAMPLING: FROM 00/00 TO 03/06/14

REPORT SENT TO: CO (1) RO (0) LPHE (1) LHO (0) FED (0) CHEM (0)

PARAMETER	UNIT	RESULT	NOTATION
010201 MANGANESE	MG/L	0.03	
010701 SODIUM	MG/L	4.0	
100300 CODOR, COLD		1.0044	
107101 PHOSPHATES, TOTAL AS P	MG/L	0.016	
010401 POTASSIUM	MG/L	0.7	
002401 SULFATES AS SO4	MG/L	21.	
002001 TOTAL DISSOLVED SOLIDS	MG/L	75.	

DATE COMPLETED: 5/09/75

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